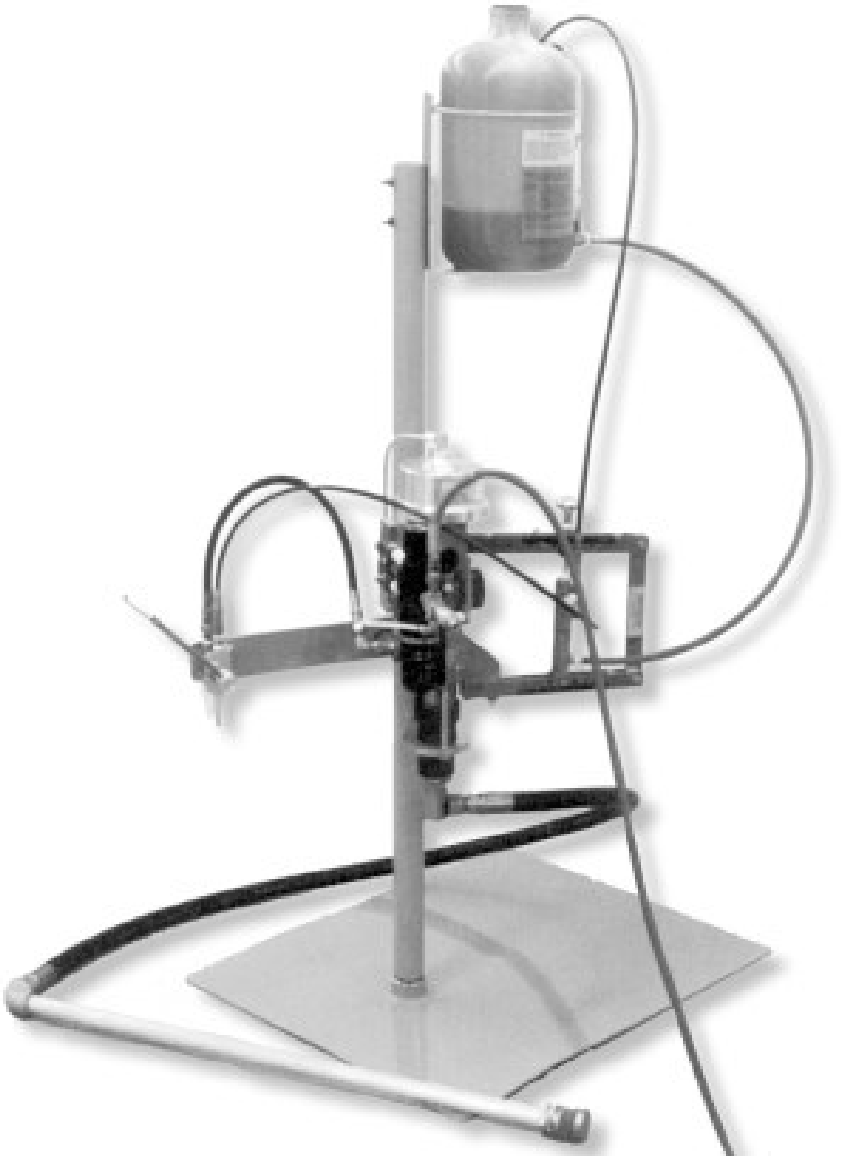
Quick Shot Operations Manual



MagnumVenusProducts™

Rev. 10/2014

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Terms & Conditions of Sale:

GSSC, Inc.'s Terms & Conditions of Sale ("Terms & Conditions") 588284v4

1. ACCEPTANCE: Acceptance of any purchase order from a customer or potential customer ("Buyer") is subject to credit approval by GSSC, Inc. ("Seller"), acceptance of the purchase order by Seller and, when applicable, any manufacturer, vendor, or other third party that provides goods to Seller for resale to Buyer ("Vendor"). If Seller, in its sole discretion, determines that Buyer's credit becomes unsatisfactory or it has reasonable grounds for insecurity, Seller reserves the right, upon notice to Buyer, to demand adequate assurance of due performance from Buyer and/or terminate any purchase order with no liability to Seller. BY REQUESTING A QUOTE FROM SELLER, ACCEPTING AN INVOICE FROM SELLER, OR PRESENTING A PURCHASE ORDER TO SELLER, BUYER CONFIRMS THAT THESE TERMS & CONDITIONS SHALL GOVERN ALL PURCHASES OF PRODUCTS OR MATERIALS PROVIDED TO BUYER BY SELLER ("GOODS"). GOODS SOLD BY SELLER ARE EXPRESSLY SUBJECT TO THE TERMS AND CONDITIONS SET FORTH HEREIN AND ANY DIFFERENT OR ADDITIONAL TERMS OR CONDITIONS SET FORTH IN A PURCHASE ORDER OR SIMILAR COMMUNICATION RECEIVED FROM BUYER ARE OBJECTED TO AND SHALL NOT BE BINDING UPON SELLER UNLESS SPECIFICALLY AGREED TO IN WRITING BY AN AUTHORIZED CORPORATE OFFICER OF SELLER.NO SELLER EMPLOYEE OR AGENT HAS THE AUTHORITY TO MODIFY THESE TERMS & CONDITIONS VERBALLY. SELLER OBJECTS TO AND REJECTS ANY TERMS BETWEEN BUYER AND ANY OTHER PARTY, AND NO SUCH TERMS, INCLUDING BUT NOT LIMITED TO ANY GOVERNMENT REGULATIONS OR "FLOWDOWN" TERMS, SHALL BE A PART OF OR INCORPORATED INTO ANY PURCHASE ORDER FROM BUYER TO SELLER, UNLESS AGREED TO IN WRITING BY AN AUTHORIZED REPRESENTATIVE OF SELLER.

2. PRICES AND TAXES: Buyer agrees to pay the prices quoted by Seller or listed on any related invoice, and is responsible for additional applicable shipping and handling charges, taxes, duties, and charges for import and export licenses and certificates. All prices quoted by Seller are subject to change without notice. Seller will generally collect applicable taxes along with the purchase price unless Buyer submits a valid tax exemption certificate, and indicates which Goods are covered by it. Prices on special-order Goods may be subject to change before shipment. In order to be corrected, any discrepancies in pricing and/or quantities on invoices must be reported by Buyer within thirty (30) days of the invoice date.

3. PAYMENT: Payment terms are 30 days net from the invoice date or upon such other terms approved by Seller in writing. Retainage shall not apply, and Buyer shall not hold back any retainage from Seller, even if retainage is part of any contract between Buyer and any other party. Payment is not contingent on Buyer's ability to collect or obtain funds from any other party. Credit card sales are billed at the time of purchase. Buyer expressly represents it is solvent at the time it places any purchase order with Seller. Seller, in its sole discretion, may determine that Buyer's financial condition requires full or partial payment prior to manufacture or shipment. If Buyer fails to make any payment when due, Seller reserves the right to suspend performance. Buyer agrees to pay a charge on all amounts past due at the rate of 1 ½% per month (18% per year) or the maximum lawful rate, whichever is less. In the event of non-payment, Buyer agrees to pay Seller's reasonable attorney fees and court costs, if any, incurred by Seller to collect payment, and all applicable interest charges. Seller may apply payments to any outstanding invoices unless Buyer provides specific payment direction.

4. TITLE AND RISK OF LOSS OR DAMAGE: As to Goods delivered directly by Seller, title passes upon delivery at the place Buyer receives possession; and, thereafter, all risk of loss or damage shall be on Buyer. All other sales are F.O.B., point of shipment, and Buyer takes title and assumes responsibility for risk of loss or damage at the point of shipment for such sales. Claims for Goods damaged in transit are Buyer's sole responsibility when not delivered directly by Seller.

5. QUOTATIONS: All quotations expire thirty (30) days from the date of the quotation unless otherwise noted on the quotation. This time limit applies even if Buyer uses the quotation to submit a job or project bid to any other party.

6. ASSIGNMENT: The Buyer's rights and responsibilities under any purchase order or these Terms & Conditions shall not be assigned by Buyer without the express written consent of the Seller.

7. RETURN OF GOODS: Permission to return items must be requested and granted in advance. No credit will be given if items are returned prior to requesting and receiving permission. Subject to the foregoing, Seller shall accept returns of Goods for any reason for a period of thirty (30) days following shipment for exchange or refund of the purchase price; provided, that such Goods must be unused and are subject to a 15% restocking charge, which may be increased or decreased, in the Seller's sole discretion, depending on the reason for such return. Any Goods which were special ordered by Buyer are may not be returned, and any such Goods which are returned are subject to a restocking/cancellation fee of 100% of the cost of the Goods. Goods shall be deemed accepted by Buyer (and cannot thereafter be returned), if Buyer fails to object to the Goods within thirty (30) days after the Goods are received by Buyer.

8. CANCELLATION: The Buyer may cancel any purchase order prior to shipment of the Goods by mutual agreement of the parties and upon payment to Seller of reasonable and proper cancellation charges.

9. TERMINATION: Seller may terminate the whole or any part of any purchase order if there is a material breach of these Terms & Conditions. In the event of any such breach, the Seller will provide Buyer with written notice of the nature of the breach and the Seller's intention to terminate for default. In the event Buyer does not cure such failure within ten (10) days of such notice, Seller may, by written notice, terminate the purchase order; provided, that Buyer shall continue its performance to the extent not terminated.

10. CHANGE IN BUYER'S FINANCIAL CONDITION: Seller reserves the right to cancel any order or to require full or partial payment in advance without liability to Seller in the event of: (i) insolvency of the Buyer; (ii) the filing of voluntary petition in bankruptcy by Buyer; (iii) the appointment of a Receiver or Trustee for the Buyer; (iv) the execution by Buyer of an assignment for benefit of creditors; or (v) past due payment on previous shipments to Buyer by Seller. Seller reserves the right to cancel Buyers credit at any time for any reason.

11. INTERPRETATION RESPONSIBILITY; PRODUCT USE AND SAFETY: Seller does not guarantee that the Goods it sells conform to any plans and specifications or intended use. When plans and specifications are involved, Buyer is solely responsible for verifying Seller's interpretations of such plans and specifications, and it is Buyer's sole responsibility to assure that Seller's Goods will be acceptable for any specific job. When Seller offers substitute Goods on any proposal, Buyer is solely responsible for confirming their acceptability.

12. DELIVERY: Shipping dates given in advance of actual shipment are approximate and not guaranteed. All contract dates and timelines begin upon receipt by Seller of a purchase order, Buyer's acceptance of these Terms & Conditions, and the payment of any required down payment.

13. EXCUSABLE DELAYS: Seller shall have no liability if its performance is delayed or prevented by causes beyond its reasonable control, including, without limitation, acts of nature, labor disputes, government priorities, transportation delays, insolvency or other inability to perform by any Vendor, or any other commercial impracticability. In the event of any such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of delay. If Goods are held or stored beyond the delivery date for the convenience of Buyer, such Goods shall be so stored at the risk and expense of Buyer.

14. CLAIMS: Claims for any nonconforming Goods must be made by Buyer, in writing, within ten (10) days of Buyer's receipt of such Goods and must state with particularity all material facts concerning the claim then known to Buyer. Failure by Buyer to give notice within such ten (10) day period shall constitute an unqualified acceptance of such Goods by Buyer, and a waiver of any right to reject or revoke acceptance of such Goods.

15. WARRANTIES:
(a) SELLER'S WARRANTIES: Seller warrants that all Goods sold shall mechanically operate as specified and shall be free from faults in respect to materials and workmanship for a period of: (i) for parts, twelve (12) months from the date of invoice, and (ii) for systems, twelve (12) months from start-up, or, if earlier, eighteen (18) months from the date of the bill of lading. Seller also warrants that the Goods shall, upon payment in full by Buyer for the Goods, be free and clear of any security interests or liens. Buyer's exclusive remedy for breach of such warranties shall be limited to repair or replacement costs or termination of any security interests or liens, and Seller shall have no responsibility for reimbursing repair costs incurred by Buyer in connection with Goods without first giving written authorization for such charges. In any claims by the Buyer against the Seller in respect of the Goods, the liability of the Seller shall be limited to the value of the Goods. This warranty applies only to Goods properly used and maintained and does not apply to any Goods which are misused or neglected, or which has been installed, operated, repaired, altered or modified other than in accordance with instructions or written authorization by Seller. This warranty does not apply to any Goods not manufactured by Seller, and Buyer's sole warranty with respect to such Goods shall be that of the Seller's Vendor, if any.
(b) VENDOR'S WARRANTIES: Seller shall assign to Buyer any Vendor warranties and/or remedies provided to Seller by its Vendor.
(c) INTELLECTUAL PROPERTY INFRINGEMENT: SELLER DISCLAIMS ANY AND ALL WARRANTIES AND/OR INDEMNIFICATIONS AGAINST INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF ANY NATURE. SELLER SHALL, IF GIVEN PROMPT NOTICE BY BUYER OF ANY CLAIM OF INTELLECTUAL PROPERTY INFRINGEMENT WITH RESPECT TO ANY GOODS SOLD HEREUNDER, REQUEST THE APPLICABLE VENDOR TO GRANT FOR THE BUYER SUCH WARRANTY OR INDEMNITY RIGHTS AS SUCH VENDOR MAY CUSTOMARILY GIVE WITH RESPECT TO SUCH GOODS.
(d) LIMITATIONS: THERE ARE NO OTHER WARRANTIES WRITTEN OR ORAL, EXPRESS, IMPLIED OR BY STATUTE. SELLER SPECIFICALLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO REPAIR OF GOODS OR OTHER COSTS ARE ASSUMED BY SELLER UNLESS AGREED TO, IN ADVANCE, IN WRITING.
16. LIMITATIONS OF LIABILITY: UNLESS APPLICABLE LAW OTHERWISE REQUIRES, SELLER'S AND ANY VENDOR'S TOTAL LIABILITY TO BUYER, BUYER'S CUSTOMERS OR TO ANY OTHER PERSON, RELATING TO ANY PURCHASES GOVERNED BY THESE TERMS & CONDITIONS, FROM THE USE OF THE GOODS FURNISHED OR FROM ANY ADVICE, INFORMATION OR ASSISTANCE PROVIDED BY SELLER (BY ANY METHOD, INCLUDING A WEB SITE), IS LIMITED TO THE PRICE OF THE GOODS GIVING RISE TO THE CLAIM. NEITHER SELLER NOR ITS VENDORS SHALL BE LIABLE FOR ANY SPECIAL, INCIDENTAL, DIRECT, CONSEQUENTIAL OR PENAL DAMAGES, INCLUDING, BUT NOT LIMITED TO BACKCHARGES, LABOR COSTS, COSTS OF REMOVAL, REPLACEMENT, TESTING OR INSTALLATION, LOSS OF EFFICIENCY, LOSS OF PROFITS OR REVENUES, LOSS OF USE OF THE GOODS OR ANY ASSOCIATED GOODS, DAMAGE TO ASSOCIATED GOODS, LATENESS OR DELAYS IN DELIVERY, UNAVAILABILITY OF GOODS, COST OF CAPITAL, COST OF SUBSTITUTE GOODS, FACILITIES OR SERVICES, DOWNTIME, OR CLAIMS FROM BUYER'S CUSTOMERS OR OTHER PARTIES. IF SELLER FURNISHES BUYER WITH ADVICE OR OTHER ASSISTANCE WHICH CONCERNS ANY GOODS SUPPLIED HEREUNDER, OR ANY SYSTEM OR EQUIPMENT IN WHICH ANY SUCH GOODS MAY BE INSTALLED, AND WHICH IS NOT REQUIRED PURSUANT TO THESE TERMS & CONDITIONS, THE FURNISHING OF SUCH ADVICE OR ASSISTANCE WILL NOT SUBJECT SELLER TO ANY LIABILITY, WHETHER BASED ON CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE) OR OTHER GROUNDS.
17. BUYER'S USE OF GOODS: Many factors beyond Seller's control contribute to the success of the Buyer's finished products, such as raw materials used to manufacture the products. Seller is not liability for the quality or quantity of finished products produced by Buyer with the use of the Goods.
18. EXPORTS: If Goods are sold for export, Seller's standard terms & condition for export sales, if any, shall also apply. Acceptance of export orders is not valid unless confirmed in writing by Seller. Buyer, and not Seller, is responsible for compliance with all United States export control rules and regulations. Buyer shall not name Seller as shipper or exporter of record in connection with the export of any Goods purchased from Seller.
19. INSTALLATION: Installation of the Goods is the responsibility of Buyer, unless otherwise indicated in the quotation or invoice provided to Buyer. Notwithstanding the foregoing, however, Seller will provide installation supervision personnel within thirty (30) days of Buyer's request. If an installation for which the Seller is to participate is delayed by the Buyer more than six (6) months after the date of shipment of the Goods, or if Buyer's facility, materials, or parts are not prepared for installation for such period of time, Seller shall be entitled to invoice the Buyer for the anticipated installation costs, up to $1,250 per day plus expenses, for each of Seller's installations technicians which are on site.
20. ANTI-MONEY LAUNDERING RESTRICTIONS: Seller rejects questionable purchase orders and payments: Except for pre-approved credit arrangements, Seller rejects third-party payments, cashiers' checks, money orders and bank drafts. Seller accepts only checks imprinted with Buyer's name; wire transfers originated in Buyer's account; letters of credit with Buyer as account party; and credit or debit cards in Buyer's name. All payments must be by single instrument in the amount of the invoice, less credits, from banks acceptable to Seller.
21. GOVERNING LAW: These Terms & Conditions and all disputes related to it shall be governed by the laws of the State of Florida, United States of America, without giving effect to its conflict of law rules.
22. JURISDICTION AND VENUE: The parties hereby irrevocably submit to the jurisdiction of the state courts of the State of Florida and to the jurisdiction of the United States District Court for the Middle District of Florida, for the purpose of any suit, action, or other proceeding related to, arising out of or based upon these Terms & Conditions or in any way related to, arising out of or involving sale of Goods hereunder; waive and agree not to assert by way of motion, as a defense, or otherwise, in any such suit, action, or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action, or proceeding is brought in any inconvenient forum, that the venue of the suit, action, or proceeding is improper, or that these Terms & Conditions or the subject matter hereof may not be enforced in or by such court; and waive and agree not to seek any review by any court of any other jurisdiction which may be called upon to grant an enforcement of the judgment of any such Florida state or federal court. The parties hereby consent to service of process by registered mail at the address to which notice is to be given. The exclusive venue for any proceeding under these Terms & Conditions shall be solely in any state court in Pinellas County, Florida, or the Federal District Court for the Middle District of Florida, Tampa Division, sitting in Tampa, Florida. Buyer acknowledges that the prices for Goods offered hereunder are in part dependent on Buyer's consent to jurisdiction in Florida and exclusive venue in Pinellas County, Florida or the Federal District Court for the Middle District of Florida, Tampa Division, sitting in Tampa, Florida, and without Buyer's consent to this jurisdiction and venue provision the prices for the Goods may be higher.
23. GENERAL: Any representation, affirmation of fact and course of dealing, promise or condition in connection therewith or usage of trade not contained herein, shall not be binding on either party. If any provision hereof shall be unenforceable, invalid or void for any reason, such provision shall be automatically voided and shall not be part of these Terms & Conditions and the enforceability or validity of the remaining provisions of these Terms & Conditions shall not be affected thereby.

TO THE EXTENT NOT CONTRARY TO APPLICABLE LAW, THE FOLLOWING SHALL APPLY:
24. Buyer waives any available homestead exemption as well as any and all requirements or rights with regard to notice, demand, presentment.

IMPORTANT NOTICE: *THIS INSTRUMENT PERMITS SELLER TO OBTAIN AND USE YOUR INDIVIDUAL CREDIT HISTORY FOR CREDIT EVALUATION PURPOSES.*

SAFETY & WARNING INFORMATION:

OPERATING YOUR POLYESTER SYSTEM SAFELY

1. Introduction

Any tool, if used improperly, can be dangerous. Safety is ultimately the responsibility of those using the tool. In like manner, safe operation of polyester processes is the responsibility of those who use such processes and those who operate the equipment. This manual outlines procedures to be followed in conducting polyester operations safety. This system has been specifically designed for use of Polyester Resin, Gel-Coat, and Methyl Ethyl Ketone Peroxides (MEKP) applications. Other formulations or blends considered for use in this equipment is strictly prohibited without the expressed consent by Magnum Venus Products Inc. Magnum Venus Products cannot eliminate every danger nor foresee every circumstance that might cause an injury during equipment operation. Some risks, such as the high pressure liquid stream that exits the spray tip, are inherent to the nature of the machine operation and are necessary to the process in order to manufacture the end-product. For this reason, ALL personnel involved in polyester operations should read and understand the Safety Manual. It is very important for the safety of employees involved in the operation that equipment operators, maintenance and supervisory personnel understand the requirements for safe operation. Each user should examine his own operation, develop his own safety program and be assured that his equipment operators follow correct procedures. Magnum Venus Products hopes that this manual is helpful to the user and recommends that the precautions in this manual be included in any such program. Magnum Venus Products recommends this Safety Manual remain on your equipment at all times for your personnel safety. In addition to the manual, Magnum Venus Products recommends that the user consult the regulations established under the Occupational Safety & Health Act (OSHA), particularly the following sections:

1910.94 Pertaining to Ventilation.

1910.106 Pertaining to flammable liquids

1910.107 Pertaining to spray finishing operations, particularly Paragraph (m) Organic Peroxides and Dual Component Coatings.

Other standards and recognized authorities to consult are the National Fire Protection Association (NFPA) bulletins as follows:

NFPA No.33 Chapter 14, Organic Peroxides and Dual Component Materials

NFPA No.63 Dust Explosion Prevention

NFPA No.70 National Electrical Code

NFPA No.77 Static Electricity

NFPA No.91 Blower and Exhaust System

NFPA No.654 Plastics Industry Dust Hazards

Type of Fire Extinguishing equipment recommended: Fire Extinguisher – code ABC, rating number 4a60bc.

Extinguishing Media – Foam, Carbon Dioxide, Dry Chemical, Water Fog.

Copies of the above bulletins are available, at a nominal charge from:

National Fire Protection Association
470 Atlantic Avenue
Boston, MA 02210

Research Report No.11 of the American Insurance Association deal with “Fire, Explosion and Health Hazards of Organic Peroxides”. It is published by:

American Insurance Association
85 John Street
New York, NY 10038

Local codes and authorities also have standards to be followed in the operation of your spraying equipment. Your insurance carrier will be helpful in answering questions that arise in your development of safe procedures.

1.2 Personal Safety Equipment

Magnum Venus Products recommends the following Personal Safety Equipment for conducting safe operations of the Polyester Systems:

Magnum Venus Products recommends that the user consult the state and local regulations established for all Safety equipment listed.

2.0 Material Safety

2.1 Hazards Associated with Laminating Operations

The major hazards which should be guarded against in polyester laminating operations are those associated with:

1. The flammability and explosion dangers of the catalyst normally used – Methyl Ethyl Ketone Peroxide (MEKP).

2. The flammability dangers of clean-up solvents sometimes used (Magnum Venus Products recommends that clean-up solvents be non-flammable), and of resin diluents used, such as styrene.

3. The flammability dangers of catalyst diluents, if used. (Magnum Venus Products recommends that catalyst not be diluted.

4. The flammability dangers of the uncured liquid resins used.

5. The combustibility dangers of the cured laminate, accumulations of over spray, and laminate sandings.

6. The toxicity dangers of all the chemicals used in laminating operations with respect to ingestion, inhalation and skin and eye hazards.

2.2 Catalyst (Methyl Ethyl Ketone Peroxide)

MEKP is among the more hazardous materials found in commercial channels. The safe handling of the “unstable (reactive)” chemicals presents a definite challenge to the plastics industry. The highly reactive property which makes MEKP valuable to the plastics industry in producing the curing reaction of polyester resins also produces the hazards which require great care and caution in its storage, transportation, handling, processing and disposal. MEKP is a single chemical. Various polymeric forms may exist which are more or less hazardous with respect to each other. These differences may arise not only from different molecular structures (all are, nevertheless, called “MEKP”) and from possible trace impurities left from the manufacture of the chemicals, but may also arise by contamination of MEKP with other materials in its storage or use. Even a small amount of contamination with acetone, for instance, may produce an extremely shock-sensitive and explosive compound.

Contamination with promoters or materials containing promoters, such as laminate sandings, or with any readily oxidizing material, such as brass or iron, will cause exothermic “redox” reactions which can become explosive in nature. Heat applied to MEKP, or heat build-up from contamination reactions can cause it to reach what is called its Self-Accelerating Decomposition Temperature (SADT).

Researchers have reported measuring pressure rates-of-rise well in excess of 100,000 psi per second when certain MEKP’s reach their SADT. (For comparison, the highest pressure rate-of-rise listed in NFPA Bulletin NO.68, “Explosion Venting”, is 12,000 psi per second for an explosion of 12% acetylene and air. The maximum value listed for a hydrogen explosion is 10,000 psi per second. Some forms of MEKP, if allowed to reach their SADT, will burst even an open topped container. This suggests that it is not possible to design a relief valve to vent this order of magnitude of pressure rate-of-rise. The user should be aware that any closed container, be it a pressure vessel, surge chamber, or pressure accumulator, could explode under certain conditions. There is no engineering substitute for care by the user in handling organic peroxide catalysts. If, at any time, the pressure relieve valve on top of the catalyst tank should vent, the area should be evacuated at once and the fire department called. The venting could be the first indication of a heat, and therefore, pressure build-up that could eventually lead to an explosion. Moreover, if a catalyst tank is sufficiently full when the pressure relief valve vents, some catalyst may spray out, which could cause eye injury. For this reason, and many others, anyone whose job puts them in an area where this vented spray might go, should always wear full eye protection even when laminating operations are not taking place.

Safety in handling MEKP depends to a great extent on employee education, proper safety instructions and safe use of the chemicals and equipment. Workers should be thoroughly informed of the hazards that may result from improper handling of MEKP, especially in regards to contamination, heat, friction and impact. They should be thoroughly instructed regarding the proper action to be taken in the storage, use and disposal of MEKP and other hazardous materials used in the laminating operation. In addition, users should make every effort to:

A. Store MEKP in a cool, dry place in original containers away from direct sunlight and away from other chemicals.

B. Keep MEKP away from heat, sparks and open flames.

C. Prevent contamination of MEKP with other materials, including polyester over spray and sandings, polymerization accelerators and promoters, brass, aluminum and non-stainless steels.

D. Never add MEKP to anything that is hot, since explosive decomposition may result.

E. Avoid contact with skin, eyes and clothing. Protective equipment should be worn at all times. During clean-up of spilled MEKP, personal safety equipment, gloves and eye protection must be worn. Firefighting equipment should be at hand and ready.

F. Avoid spillage, which can heat up to the point of self-ignition.

G. Repair any leaks discovered in the catalyst system immediately, and clean up the leaked catalyst at once in accordance with the catalyst manufacturer's instructions.

H. Use only original equipment or equivalent parts from Magnum Venus Products in the catalyst system (i.e.: hoses, fitting, etc.) because a dangerous chemical reaction may result between substituted parts and MEKP.

I. Catalyst accumulated from the purging of hoses or the measurement of fluid output deliveries should never be returned to the supply tank, such catalyst should be diluted with copious quantities of clean water and disposed of in accordance with the catalyst manufacturer's instructions.

The extent to which the user is successful in accomplishing these ends and any additional recommendations by the catalyst manufacturer determines largely the safety that will be present in his operation.

2.3 Clean-Up Solvents and Resin Diluents

WARNING

A hazardous situation may be present in your pressurized fluid system! Hydrocarbon Solvents can cause an explosion when used with aluminum or galvanized components in a closed (pressurized) fluid system (pump, heaters, filters, valves, spray guns, tanks, etc.). The explosion could cause serious injury, death and/or substantial property damage. Cleaning agents, coatings, paints, etc. may contain Halogenated Hydrocarbon Solvents. Some Magnum Venus Products spray equipment includes aluminum or galvanized components and will be affected by Halogenated Hydrocarbon Solvents.

A. There are three key elements to the Halogenated Hydrocarbon (HHC) solvent hazard.

a. The presence of HHC solvents. 1,1,1 – Trichloroethane and Methylene Chloride are the most common of these solvents. However, other HHC solvents are suspect if used; either as part of paint or adhesives formulation, or for clean-up flushing. b. Aluminum or Galvanized Parts. Most handling equipment contains these elements. In contact with these metals, HHC solvents could generate a corrosive reaction of a catalytic nature.

b. Equipment capable of withstanding pressure. When HHC solvent contacts aluminum or galvanized parts inside a closed container such as a pump, spray gun, or fluid handling system, the chemical reaction can, over time, result in a build-up of heat and pressure, which can reach explosive proportions.

When all three elements are present, the result can be an extremely violent explosion. The reaction can be sustained with very little aluminum or galvanized metal; any amount of aluminum is too much.

A. The reaction is unpredictable. Prior use of an HHC solvent without incident (corrosion or explosion) does NOT mean that such use is safe. These solvents can be dangerous alone (as a clean-up or flushing agent) or when used as a component or a coating material. There is no known inhibitor that is effective under all circumstances. Furthermore, the mixing of HHC solvents with other materials or solvents, such as MEKP, alcohol, and toluene, may render the inhibitors ineffective.

B. The use of reclaimed solvents is particularly hazardous. Reclaimers may not add any inhibitors. Also, the possible presence of water in reclaimed solvents could feed the reaction.

C. Anodized or other oxide coatings cannot be relied upon to prevent the explosive reaction. Such coatings can be worn, cracked, scratched, or too thin to prevent contact. There is no known way to make oxide coatings or to employ aluminum alloys, which will safely prevent the chemical reaction under all circumstances.

D. Several solvent suppliers have recently begun promoting HHC solvents for use in coating systems. The increasing use of HHC solvents is increasing the risk. Because of their exemption from many State Implementation Plans as Volatile Organic Compounds

(VOC's), their low flammability hazard, and their not being classified as toxic or carcinogenic substances, HHC solvents are very desirable in many respects.

WARNING: **Do not use Halogenated Hydrocarbon solvents in pressurized fluid systems having aluminum or galvanized wetted parts.**

NOTE: **Magnum Venus Products is aware of NO stabilizers available to prevent Halogenated Hydrocarbon solvents from reaction under all conditions with aluminum components in closed fluid system.** ***TAKE IMMEDIATE ACTION…*** **Halogenated Hydrocarbon solvents are dangerous when used with aluminum components in a closed fluid system.**

A. Consult your material supplier to determine whether your solvent or coating contains Halogenated Hydrocarbon Solvents.

B. Magnum Venus Products recommends that you contact your solvent supplier regarding the best non-flammable clean-up solvent with the heat toxicity for your application.

C. If, however, you find it necessary to use flammable solvents, they must be kept in approved, electrically grounded containers.

D. Bulk solvent should be stored in a well-ventilated, separate building, 50 feet away from your main plant.

E. You should allow only enough solvent for one day's use in your laminating area.

F. "NO SMOKING" signs must be posted and observed in all areas of storage or where solvents and other flammable materials are used.

G. Adequate ventilation (as covered in OSHA Section 1910.94 and NFPA No.91) is important wherever solvents are stored or used, to minimize, confine and exhaust the solvent vapors.

H. Solvents should be handled in accordance with OSHA Section 1910.106 and 1910.107.

2.4 Catalyst Diluents

Magnum Venus Products spray-up and gel-coat systems currently produced are designed so that catalyst diluents are not required. Magnum Venus Products, therefore, recommends that diluents not be used. This avoids the possible contamination which could lead to an explosion due to the handling and mixing of MEKP and diluents. In addition, it eliminates any problems from the diluents being contaminated through rust particles in drums, poor quality control on the part of the diluents suppliers, or any other reason. If, however, diluents are absolutely required, contact your catalyst supplier and follow his instructions explicitly. Preferable, the supplier should premix the catalyst to prevent possible “on the job” contamination while mixing.

WARNING

If diluents are not used, it should be remembered that catalyst spillage, gun, hose and packing leaks are potentially more hazardous, since each drop contains a higher concentration of catalyst, and therefore will react quicker with over spray and the leak.

2.5 Cured Laminate, Overspray and Laminate Sandings Accumulation

A. Remove all accumulations of overspray, FRP sandings, etc. from the building as they occur. If this waste is allowed to build up, spillage of catalyst is more likely to start a fire; in addition, the fire would burn hotter and longer.

B. Floor coverings, if used, should be non-combustible.

C. Spilled or leaked catalyst may cause a fire if it comes in contact with an FRP product, over-sprayed chop or resin, FRP sandings or any other material with MEKP.

To prevent this spillage and leakage, you should:

1. Maintain your Magnum Venus Products System. Check the gun several times daily for catalyst and resin packing or valve leaks. REPAIR ALL LEAKS IMMEDIATELY.

2. Never leave the gun hanging over, or lying inside the mold. A catalyst leak in this situation would certainly damage the part, possibly the mold, and may cause a fire.

3. Inspect resin and catalyst hoses daily for wear or stress at the entry and exits of the boom sections and at the hose and fittings. Replace if wear or weakness is evident or suspected.

4. Arrange the hoses and fiberglass roving guides so that the fiberglass strands DO NOT rub against any of the hoses at any point. If allowed to rub, the hose will be cut through, causing a hazardous leakage of material which could increase the danger of fire. Also, the material may spew onto personnel in the area.

2.7 Toxicity of Chemicals

A. Magnum Venus Products recommends that you consult OSHA Sections 1910.94, 1910.106, 1910.107 and NFPA No.33, Chapter 14, and NFPA No.91.

B. Contact your chemical supplier(s) and determine the toxicity of the various chemicals used as well as the best methods to prevent injury, irritation and danger to personnel.

C. Also determine the best methods of first aid treatment for each chemical used in your plant.

2.8 Treatment of Chemical Injuries

Great care should be used in handling the chemicals (resins, catalyst and solvents) used in polyester systems. Such chemicals should be treated as if they hurt your skin and eyes and as if they are poison to your body. For this reason, Magnum Venus Products recommends the use of protective clothing and eye wear in using polyester systems. However, users should be prepared in the event of such an injury. Precautions include:

1. Know precisely what chemicals you are using and obtain information from your chemical supplier on what to do in the event the chemical gets onto your skin or into the eyes, or is swallowed.

2. Keep this information together and easily available so that it may be used by those administering first aid or treating the injured person.

3. Be sure the information from your chemical supplier includes instructions on how to treat any toxic effects the chemicals have.

WARNING

Contact your doctor immediately in the event of any injury and give him the information you have collected. If your information includes first aid instructions, administer first aid immediately while you are contacting your doctor.

Fast treatment of the outer skin and eyes that contact such chemicals generally includes immediate and thorough washing of the exposed skin and immediate and continuous flushing of the eyes with lots of clean water for at least 15 minutes or more. These general instructions of first aid treatment, however, may be incorrect for some chemicals; that is why you must know the chemicals and treatment before an accident occurs. Treatment for swallowing a chemical frequently depends upon the nature of the chemical.

NOTE: **Refer to your System User Manual for complete and detailed operating instructions and service information.**

3.0 Equipment Safety

WARNING

Magnum Venus Products suggests that personal safety equipment such as EYE GOGGLES, GLOVES, EAR PROTECTION, and RESPIRATORS be worn when servicing or operating this equipment. Ear protection should be worn when operating a fiberglass chopper to protect against hearing loss since noise levels can be as high as 116 dB (decibels). This equipment should only be operated or serviced by technically trained personnel!

WARNING

Never place fingers, hands, or any body part near or directly in front of the spray gun fluid tip. The force of the liquid as it exits the spray tip can cause serious injury by shooting liquid through the skin. NEVER LOOK DIRECTLY INTO THE GUN SPRAY TIP OR POINT THE GUN AT OR NEAR ANOTHER PERSON. (TREAT THE GUN AS IF IT WERE A LOADED PISTOL.)

3.1 Emergency Stop Procedures

The following steps should be followed in order to stop the machinery in an emergency situation

1. The ball valve located where the air enters the power head of the resin pump, should be moved to the “OFF” or closed position. To do this, simply rotate the lever on the ball valve 90 degrees. Doing this will cause all the system air to bleed out of the system in a matter of a few seconds, making the system incapable of operating

NOTE: Step 2 is a precautionary step and should be followed whenever the above mentioned ball valve is activated to the stop mode. Failure to do so, can damage the regulators and components on reactivating to the “ON” position.

2. Turn all system regulators to the “OFF” position (counter-clockwise) position

NOTE: Verify that the Catalyst relief line, located on the catalyst manifold, and the resin return line, located on the resin filter, are secured relieving catalyst and resin fluid pressure.

3. Catalyst pressure in the catalyst pump can be eliminated by rotating the ball valve on the catalyst manifold 90 degrees to the “open” or “on” position.

Note: The “open” or “on” position is when the ball valve handle is parallel (in line) with the ball valve body. The “closed” or “off” position is when the ball valve handle is perpendicular (across) the ball valve body.

4. Resin pressure in the resin pump can be eliminated by rotating the ball valve on the resin filter 90 degrees to the “open” or “on” position. Place a container under the ball valve to catch any resin that is ejected out of the valve.

3.2 Grounding

Grounding an object means providing an adequate path for the flow of the electrical charge from the object to the ground. An adequate path is one that permits charge to flow from the object fast enough that it will not accumulate to the extent that a spark can be formed. It is not possible to define exactly what will be an adequate path under all conditions since it depends on many variables. In any event, the grounding means should have the lowest possible electrical resistance. Grounding straps should be installed on all loose conductive objects in the spraying area. This includes material containers and equipment. Magnum Venus Products recommends grounding straps be made of AWG No.18 stranded wire as a minimum and the larger wire be used where possible. NFPA Bulletin No77 states that the electrical resistance of such a leakage path may be as low as 1 meg ohm (10 ohms) but that resistance as high as 10,000 meg ohms will produce an adequate leakage path in some cases. Whenever flammable or combustible liquids are transferred from one container to another, or from one container to the equipment, both containers or container and equipment shall be effectively bonded and grounded to dissipate static electricity. For further information, see **National Fire Protection Association** (NFPA) 77, titled "Recommended Practice on Static Electrical". Refer especially to section 7-7 titled "Spray Application of Flammable and Combustible Materials". Check with local codes and authorities for other specific standards that might apply to your application. NEVER USE HARD MATERIALS SUCH AS WIRE, PINS, ETC., TO CLEAR A PLUGGED GUN. HARD MATERIALS CAN CAUSE PERMANENT DAMAGE. DAB WITH A BRISTLE BRUSH, BLOW BACKWARDS WITH AIR UNTIL CLEAR WHILE WEARING A PROTECTIVE EYE SHIELD. REPEAT AS MANY TIMES AS NECESSARY. DO NOT PERFORM ANY MAINTENANCE OR REPAIRS UNTIL YOU HAVE FOLLOWED THE PRECAUTIONS STATED ABOVE. IF YOU, AS AN EQUIPMENT OPERATOR OR SUPERVISOR, DO NOT FEEL THAT YOU HAVE BEEN ADEQUATELY TRAINED OR INSTRUCTED AND THAT YOU LACK THE TECHNICAL KNOWLEDGE TO OPERATE OR PERFORM MAINTENANCE ON A PIECE OF MAGNUM VENUS PRODUCTS EQUIPMENT, PLEASE CALL MAGNUM VENUS PRODUCTS BEFORE OPERATING OR PERFORMING MAINTENANCE ON THE EQUIPMENT. IF YOU HAVE ANY QUESTIONS REGARDING THE ABOVE PRECAUTIONS OR ANY SERVICE OR OPERATION PRECEDURES, CALL YOUR MAGNUM VENUS PRODUCTS DISTRIBUTOR OR MAGNUM VENUS PRODUCTS.

NOTICE: All statements, information and data given herein are believed to be accurate and reliable but are presented without guaranty, warranty or responsibility of any kind express or implied. The user should not assume that all safety measures are indicated or that other measures are not required.

DANGER: Contaminated catalyst may cause Fire or Explosion. Before working on the catalyst pump or catalyst accumulator, wash hands and tools thoroughly. Be sure work area is free of dirt, grease or resin. Clean catalyst system components with clean water only.

DANGER: Eye, skin and respiration hazard. The Catalyst, MEKP, may cause blindness, skin irritation or breathing difficulty. Keep hands away from face. Keep food and drink away from work area.

WARNING: Please refer to your catalyst manufacturer's safety information regarding the safe handling and storage of catalyst. Wear appropriate safety equipment as recommended.

Introduction:

A state-of-the-art, easy-to-use pail dispensing system designed for the fiber reinforced composites industry.

MVP's Quick Shot Pail Dispenser features an 11:1 power ratio positive displacement fluid pump, capable of delivering up to 4 – 8 lbs. per minute. Slaved to the resin pump, the catalyst pump can meter measured amounts of MEKP into the resin varying from 1% to 2.5% of the volume of the resin.

The Quick Shot is very simple to operate. Resin and catalyst can be mixed by hand or with an optional air-driven pail mixer to disperse the catalyst evenly throughout the resin.

Operators can achieve accurately measured, evenly mixed catalyst and resin quickly and easily. Because two materials are pumped separately into the pail, there are no accumulators to charge and no gun to flush.

BASIC UNIT FEATURES:

- Pro Series™ Resin Pump
- Catalyst Pump
- Regulator/Filter Combination Unit with gauge
- Catalyst Inline Relief Check Valve
- Parallel Ball Valve Assembly (for dispensing resin & catalyst)

OPTIONAL UNIT FEATURES:

- Optional Air-Driven Hand Mixer
- Optional Wall Mount Configuration

CONTENTS:

Standard unit marking on box:

1.	VPRO-45110	Resin Pump Assembly
2.	PCP-1000-RV-INT	Catalyst Pump Assembly
3.	85690-1	Dual Ball Valve Assembly
4.	CJ-2000-4-RSP 2	Gallon Catalyst Jug
5.	RV-1000-500	Catalyst Relief Valve – 500psi
6.	HSA-1000	Assy. - Wand 55 Gal
7.	85693-1	Pump Mount Column (Base Mount unit only)
8.	62640-3	Base Plate (Base Mount unit only)
9.	85681-1	Bracket Extension - Valve Mount (Base Mount unit only)
10.	05812	Regulator/Filter Combo with Gauge
11.	06414	Gauge - 160 PSI - 2" Face
12.	85730-1	Cat Jug Bracket
13.	85723-1	Pump Mount Bracket

Check contents of box before installation.

SPECIFICATIONS:

Output: 4 to 8 lb. (1.8 to 3.5 kg) per min.
Catalyst %: 1% to 2.5% by volume
Air Consumption: 6 cfm
Length: 25 inches (63.5 cm)
Width: 33 inches (83.8 cm)
Height: 54 inches (137 cm)
Weight: 200 lbs. (91 kg)

AIR REQUIREMENTS:

Air supply should be clean, dry compressed air at up to 90 -100 PSI (6 – 7 bar) and a minimum of 10 CFM. MVP recommends the use of an air hose that is ½ inch in diameter. If air supply hose is too long or too small in diameter, the resin pump may starve for air.

TOOL REQUIREMENTS:

1. Flat-tip screwdriver with ¼ inch tip
2. 6-inch adjustable wrench
3. 12-inch adjustable wrench
4. 14-inch pipe wrench
5. 7/16-inch open-end wrench

Getting Started:

Warning: before preforming any operations on the Quick Shot be sure read and follow all Safety information.

MATERIAL REQUIREMENTS:

1. Minimum of 5 gallons of resin
2. Minimum of 1 gallon of catalyst

CONTROLS:
There are only 3 basic control features on the Quick Shot:

1. Catalyst pump movement along the slave arm to increase or decrease catalyst percentages. (See Fig. 1)

Fig. 1

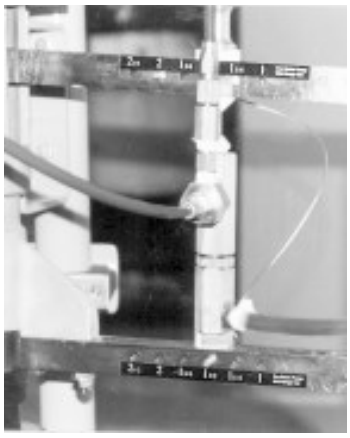


Fig. 2

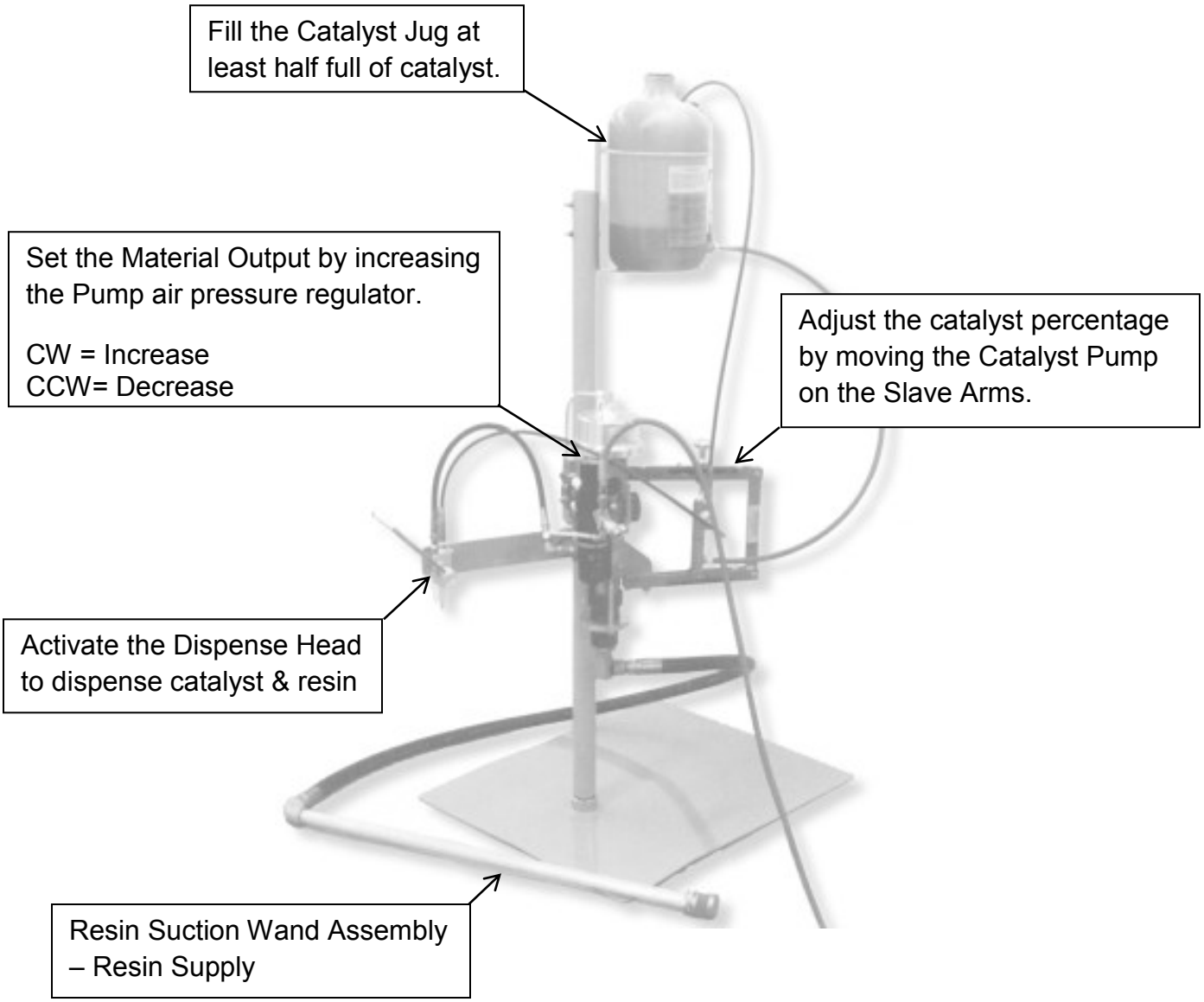
2. Adjustment to the air regulator/filter knob that increases air pressure to the resin pump. (See Fig. 2)

3. Parallel Ball Valve Assembly that turns the resin and catalyst supply on or off. (See Fig. 3)

Fig. 3

Quick Start Instructions:

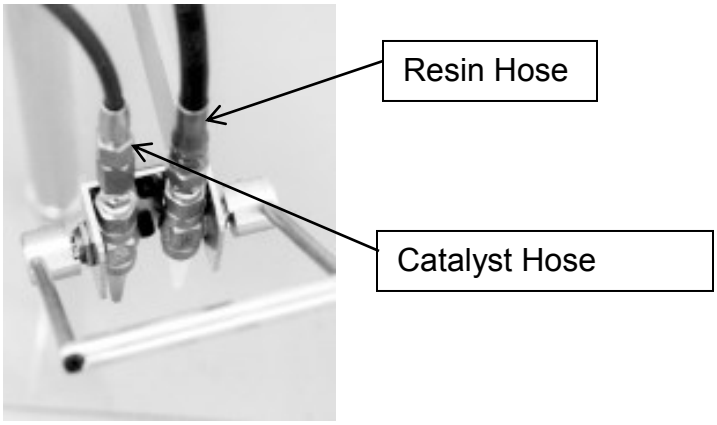
1. Prime resin pump
2. Adjust the catalyst percentage
3. Prime Catalyst pump
4. Slowly increase pump air regulator to desired output.
5. Check all hoses for fluid and air leaks


Fill the Catalyst Jug at least half full of catalyst.
Set the Material Output by increasing the Pump air pressure regulator.
CW = Increase
CCW= Decrease
Adjust the catalyst percentage by moving the Catalyst Pump on the Slave Arms.
Activate the Dispense Head to dispense catalyst & resin
Resin Suction Wand Assembly – Resin Supply

Hose Connections:

1. Resin Hose – connect the resin hose from the pump to resin valve on the dispense head. (See Fig. 4)

Fig. 4



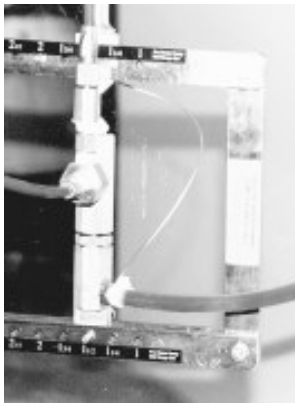
2. Catalyst Hose – connect the catalyst hose from the catalyst pump output to the dispense head. (See Fig. 4)

3. Catalyst Return Hose – connect the catalyst relief valve back to the top of the catalyst jug.

4. Catalyst Pump Feed Hose – connect the outlet of the catalyst jug to the catalyst pump inlet. (See Fig. 5 & 6)

Fig. 5

Fig. 6



5. Resin Pump Pickup Wand Assembly – connect the pickup wand to the resin pump inlet. (See Fig. 7 & 8)

Fig. 7

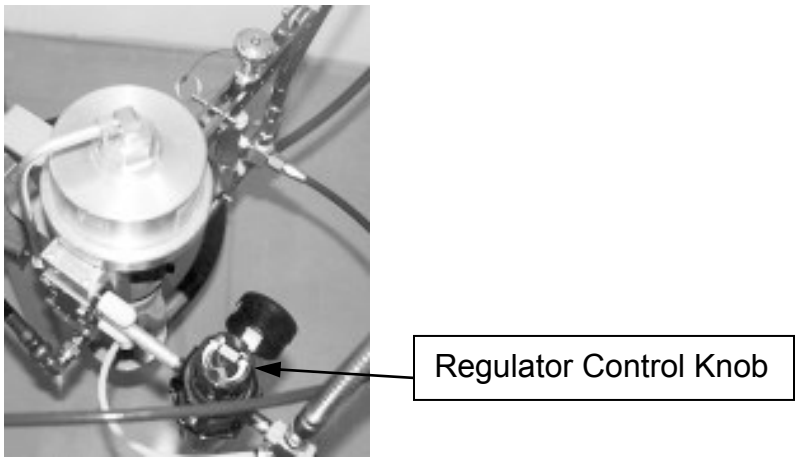
Fig. 8

Operating Procedures:

1. Move the catalyst pump to the desired catalyst percentage as noted on the slave arm sticker and pin the bottom and top bearing block at the same percentage.

2. Turning the knob counter-clockwise on top of the regulator/filter combination unit decreases air pressure to the resin pump. Turning the knob clockwise increases air pressure to the resin pump. Turning the knob counter-clockwise until the pressure gauge reads zero shuts the unit down. (See fig. 9)

Fig. 9



3. When air pressure is attached to the pump, pulling the parallel ball valve down will start resin and catalyst flow. Pushing the handle back up will shut the resin and catalyst flow off, stalling the resin pump against the fluid pressure and shutting it off. (See fig. 10)

Fig. 10

Note: The best way to regulate the flow rate, or output of the machine is at the regulator that controls the amount of air supplied to the resin pump. In other words, the higher the regulated air pressure, the faster the pump will run. In practice, the valve is either on or off. Any attempt to throttle the valve may negatively affect the machine's ability to meter the two materials in the appropriate quantities.

Priming Procedures:

With the hoses connected as stated above:

1. Fill the catalyst jug with a supply of catalyst.

2. Allow catalyst to gravity feed down to the inlet of the pump. Be sure to let all air bubbles rise back to the jug before operating the pump.

3. Disconnect the catalyst pump from the slave arm and move it to the extreme end of the slave arm. Pin it in a vertical position. Pin should be between bearing block and resin pump but not connecting the bearing block to the slave arm. Catalyst pump must not stroke when the resin pump is activated.

4. Place suction wand of resin pump into an adequate supply of resin.

5. Open parallel ball valves, pull handle down. Make sure there is a container to catch the dispensed material.

6. Slowly increase air pressure to the resin pump. Turn the regulator knob clockwise.

7. Allow resin to move through the pump and out the ball valve until an even flow is emitted from the dispensing nozzle. No air.

8. Turn parallel ball valves off in the up position. Allow the resin pump to stall (stop) against the fluid pressure.

9. Now return to the catalyst pump and operate the catalyst pump by hand until fluid pressure (catalyst) builds to the point where it is difficult to move the pump up and down by hand.

10. Move the catalyst pump along the slave arm toward the resin pump. Pin the bearing blocks, top and bottom, to the slave arms at the desired catalyst percentage.

11. Increase the air pressure to the desired operating pressure of the resin pump and allow the pump to stall against the fluid pressure.

12. With an appropriate container under the dispensing nozzles, open the parallel ball valves. The unit will now dispense resin and catalyst.

NOTE: It may take the catalyst pump a few strokes to balance out. Therefore, the first container of materials dispensed may be a little low on the catalyst percentages.

After the initial start-up, the unit will dispense a quantity of resin with the proper catalyzation each time the ball valves are open, provided the material supply is maintained.

Shut Down Procedures:

TO SHUT THE UNIT DOWN OVERNIGHT:

1. Turn the regulator knob counter-clockwise until the gauge reads zero.
2. Clean nozzle and ball valve area.

TO SHUT THE UNIT DOWN FOR PROLONGED PERIODS:

1. Bleed resin and catalyst from the system.
2. Purge resin pump through the ball valve with solvent until clean.
3. Purge catalyst pump, by hand, through the ball valve with distilled water.

Caution: Using a fluid other than distilled water to purge the catalyst pump may contaminate the catalyst pump.

4. Bleed the cleaning materials from both pumps.
5. Cover the dispensing nozzles separately with small plastic bags. Fasten in place with rubber bands or twist ties.
6. Cover the resin suction wand screen with a plastic bag. Secure in place.
7. Cover complete unit with plastic sheet. Store in a dry, dust-free place.

Troubleshooting:

Caution: Before attempting to disassemble any portion of catalyst or resin system, the fluid pressure in the system should be fully relieved. The air supply to power head of pump should be turned off. Allow fluid to drain into proper container.

NO RESIN IS COMING OUT -

CHECK THE FOLLOWING:

A. Check air supply to pump.

B. Check resin supply.

C. Check pick-up wand screen, resin hose & ball valve for obstructions.

D. Replace piston cups, piston & inlet ball and packings.

NO CATALYST IS COMING OUT -

CHECK THE FOLLOWING:

A. Check catalyst pump for air lock.

B. Check catalyst supply.

C. Check screen in jug for obstructions.

D. Replace catalyst pump piston seal, piston & inlet ball and packings.

METERING IS UNEVEN -

CHECK THE FOLLOWING:

A. Check both pumps for even delivery of material on both up & down strokes.

B. Check fluid lines for obstructions.

C. Check catalyst pump for air lock.

D. Assure that ball valves are in full open position.

PUMP CALIBRATION -

Note: If you would like to check out the ratio output between the resin and catalyst pumps, the use of graduated containers will simplify the process. The resin pump will dispense approximately 100 times more than the catalyst pump dispenses. Therefore, appropriate containers must be sized accordingly.

Be sure to have air pressure to the power head of the resin pump and all air purged from the resin and catalyst lines. Place the graduated containers under the dispensing nozzles of the parallel ball valves (resin on the left, catalyst on the right). Open the ball valve and allow the pump to stroke 4 or 5 times. Note the volume of material in each container. Divide the volume of resin into the volume of catalyst. This will give you the percentage of catalyst to resin.

IF THE METERING PERCENTAGE IS OFF -

Check catalyst pump for air lock. Turn off air supply to resin pump. Bleed fluid pressure. Disconnect upper bearing block at the top of the catalyst pump from slave arm. With valves open, stroke catalyst pump by hand. If material is not delivered evenly on both up and down stroke, catalyst pump must be repaired.

Component Manuals:

Pump / Fluid Section Manual:

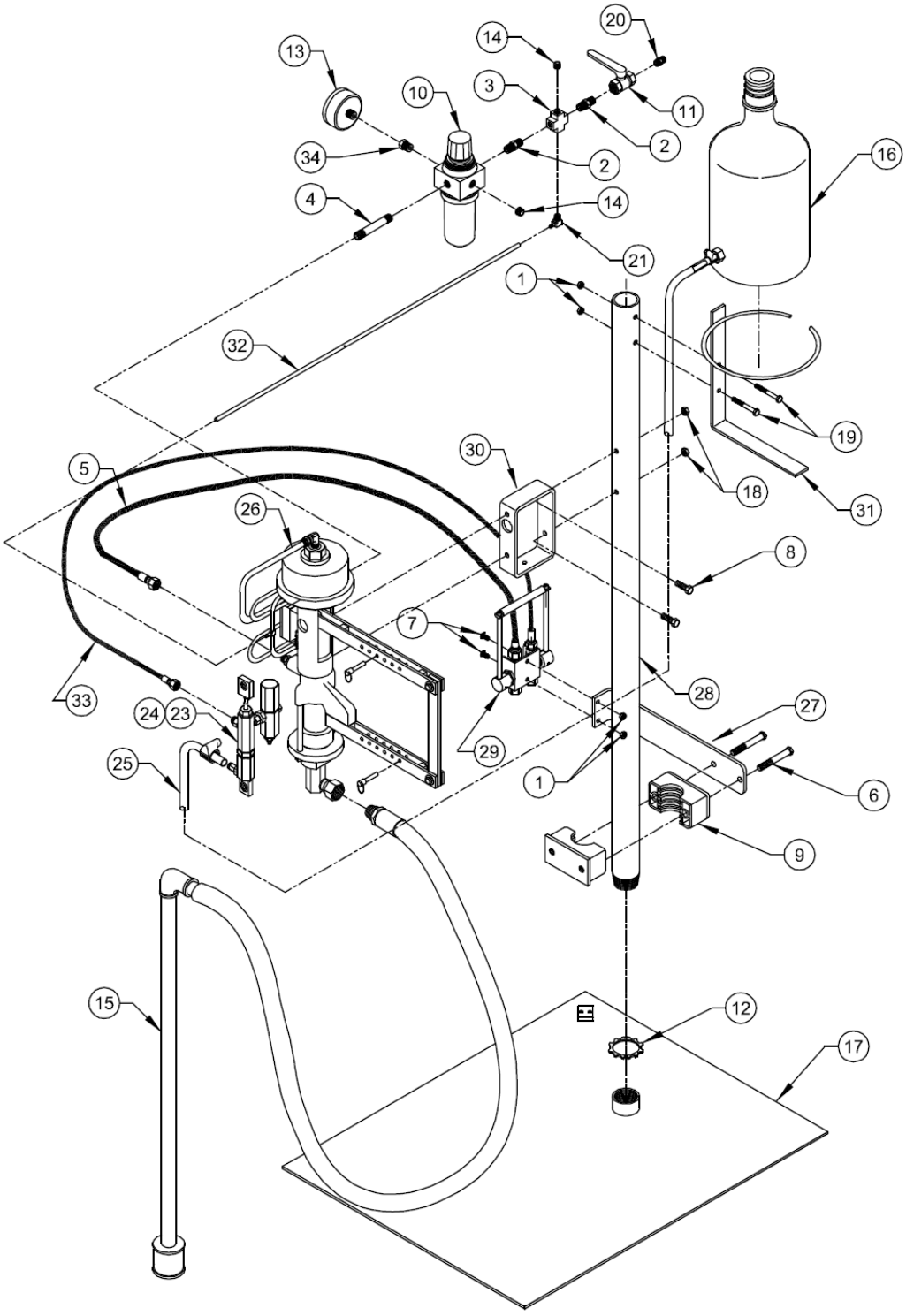
The Quick Shot comes standard with the VPRO-45110-QS Fluid Section / Pump assembly. For detailed repair instructions see the manual "**VPRO-45110 Series Pump Manual**"

Catalyst Pump Manual:

The Quick Shot comes standard with the CPC-2000-RV-INT Catalyst Pump. For detailed repair instructions see the manual "**PCP-2000 Catalyst Pump Manual – Low Range**"

Parts Drawings:

QS-FM-PRO-11	Quick Shot Assembly
VPRO-45110-QS	11:1 Pro Pump Assembly – Quick Shot
85690-1	Dual Parallel Ball Valve Assembly
RV-1000-XXX	Relief Valve Assembly
PCP-2000-RV-INT	Catalyst Pump Assembly
CJ-2000-4-RSP	Catalyst Jug Assembly
HSA-1000	Suction Wand Assembly



MAGNUM VENUS PLASTECH

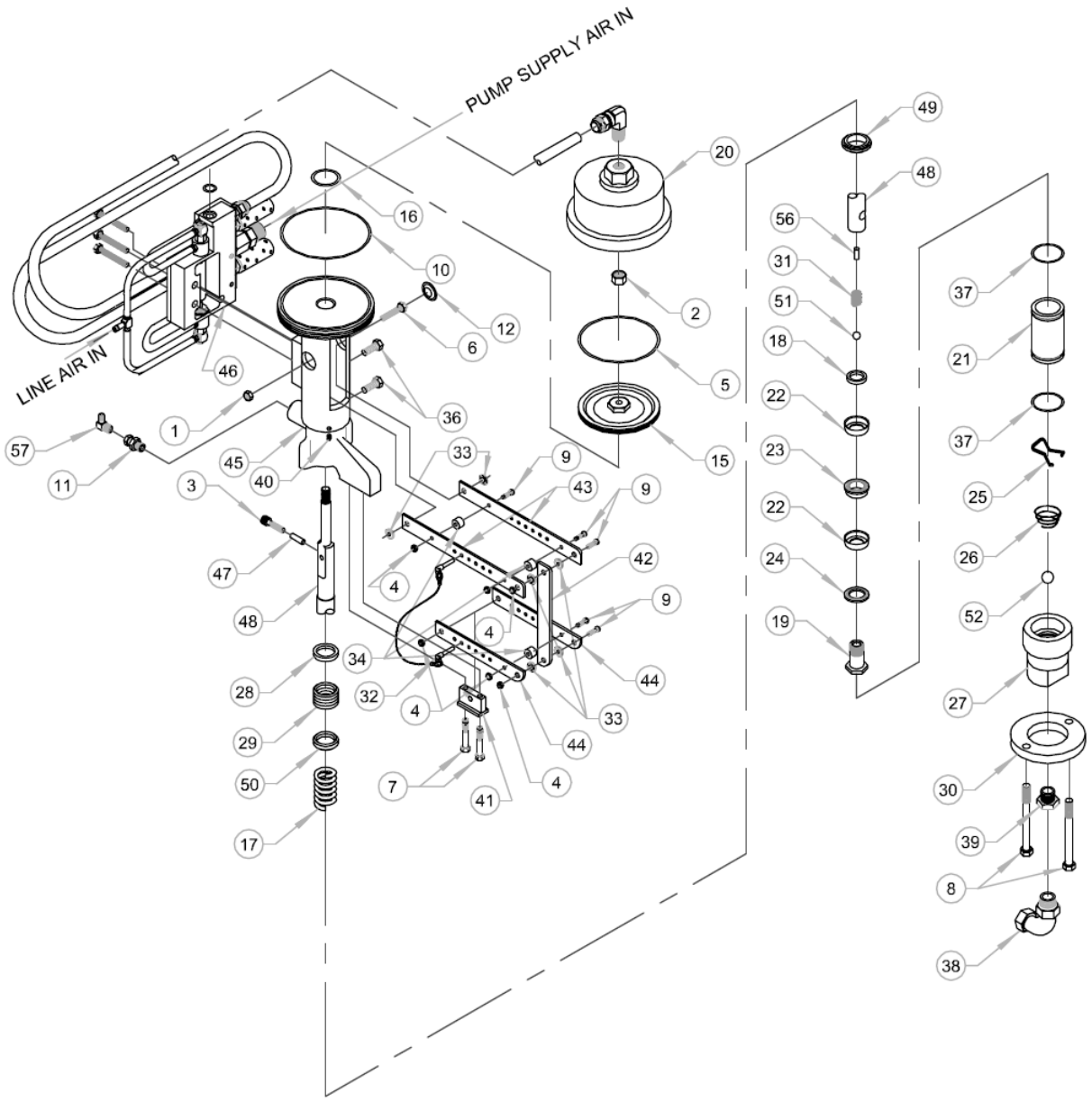
ASSY - QUICK SHOT DISPENSER	QS-FM-PRO-11

REV. - 09/14/05 BT2
REV. A - ITEM 16 WAS 4105-00-01 04/04/06 BT2
REV. B - ITEM 3 WAS PF-FC-04, ITEM 4 WAS 00817 12/02/08 BT2
REV. C - CREATED MULTIPLE REVISIONS 01/16/09 BT2

Assy - Quick Shot Dispenser QS-FM-PRO-11

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	F-LN-04C	4	NYLOCK NUT
2	PF-HN-04	2	CLOSE NIPPLE
3	PF-FX-04-BR	1	PIPE CROSS
4	PF-HN-04-3L	1	PIPE NIPPLE
5	HAW-0444-3	1	HIGH PRESSURE HOSE
6	F-HB-04C-52-GR5	2	HEX BOLT
7	F-BHCS-04C-12	2	BUTTON HEAD CAP SCREW
8	F-HB-05C-44	2	HEX HEAD CAP SCREW
9	03638	1	PIPE CLAMP
10	05812	1	REGULATOR / FILTER COMBO
11	BV-FF44-L	1	BALL VALVE
12	06252	1	LOCK RING
13	06414	1	PRESSURE GAUGE
14	PF-AP-04	2	PIPE PLUG
15	VHSA-1000	1	SUCTION WAND
16	CJ-2000-4-RSP	1	CATALYST JUG
17	62640-3	1	BASE PLATE WELDMENT
18	F-LN-05C	2	HEX NUT
19	F-HB-04C-44-GR5	2	HEX BOLT
20	PF-HN-04-04S	1	NIPPLE
21	MPM-2585	1	POLY ELBOW
23	PCP-1000-RV-INT	1	PRO CAT PUMP
24	RV-1000-500	1	RELIEF VALVE
25	MS-2052-50IN	1	TUBING
26	85675-1	1	ASSY - RESIN PUMP
27	85681-1	1	EXTENSION BRACKET
28	85683-1	1	PUMP MOUNT COLUMN
29	85690-1	1	ASSY - DUAL BALL VALVES
30	85723-1	1	PUMP MOUNT BRACKET
31	85730-1	1	CAT JUG BRACKET
32	MPM-2052-1	2.5 FT	TUBING
33	HCHP-023J3J-3	1	3 FT CAT HOSE ASSY
34	PF-RB-04-02	1	REDUCER BUSHING
	90087-1	1	MANUAL - QUICK SHOT OPERATIONS



MAGNUM VENUS PLASTECH

ASSY - 11 : 1 PRO PUMP	VPRO-45110-QS

REV, - 03/16/09 BT2
REV, A - REMOVED ITEM 21B FROM OPTIONAL PARTS, NO LONGER AVAILABLE 07/26/10 BT2

ASSY - 11 : 1 PRO PUMP VPRO-45110-QS

PARTS LIST

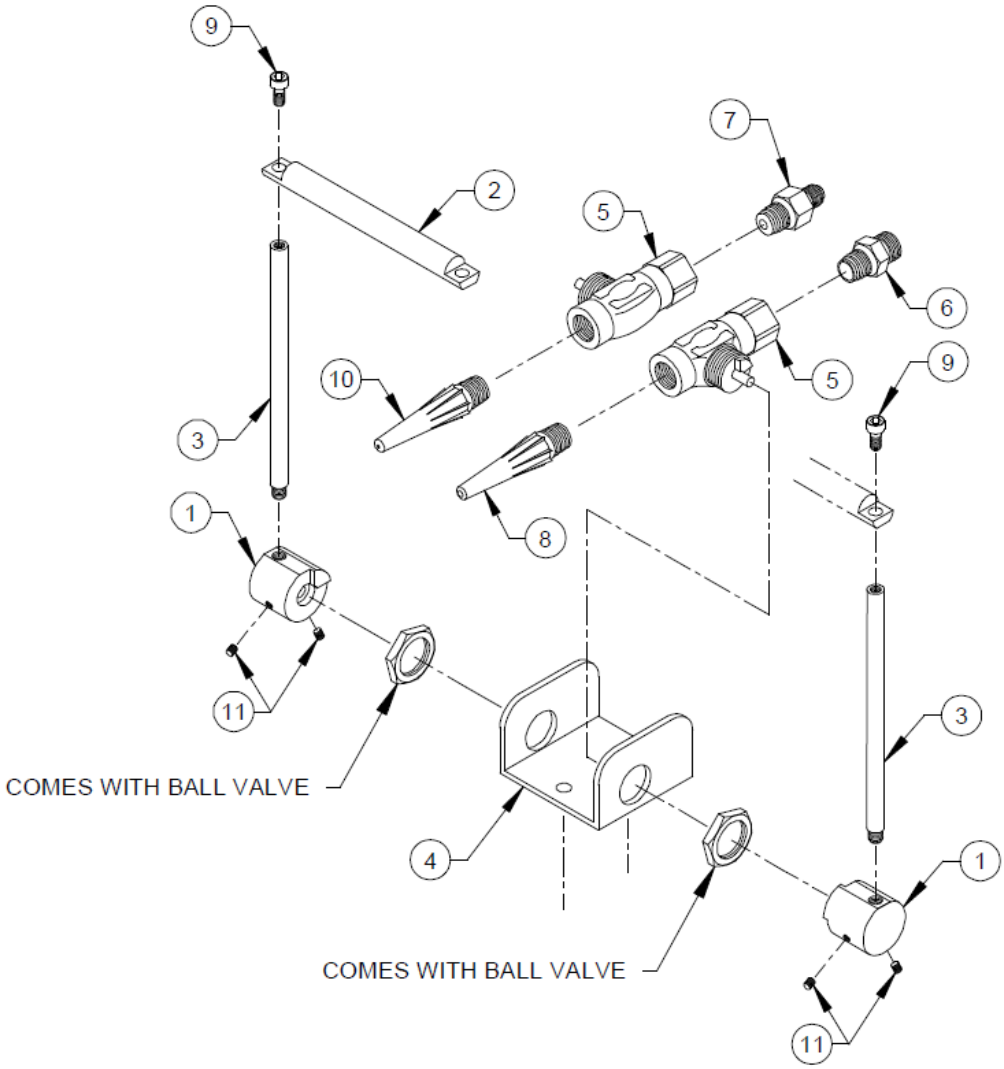
ITEM	PART NO.	QTY	DESCRIPTION
1	F-LN-04C	1	LOCK NUT
2	F-JN-07C	1	HEX NUT
3	F-CS-04C-24-SS	1	SOCKET HEAD CAP SCREW
4	F-LN-04F	6	LOCK NUT
5	O-B-242	1	O-RING
6	F-HB-04C-24	1	HEX BOLT
7	F-HB-05C-32	2	HEX BOLT
8	F-HB-06C-76-GR5	2	HEX BOLT
9	02966	6	AIRCRAFT BOLT
10	O-B-157	1	O-RING
11	PF-SW-06	1	SWIVEL FITTING
12	15515	1	PLUG
15	15888-1	1	AIR MOTOR PISTON
16	O-B-112	1	O-RING
17	04305-1	1	SPRING
18	15936-1	1	COMPRESSION RING
19	15939-1	1	PISTON BODY
20	15983-1	1	CYLINDER HEAD
21	15986-1	1	CYLINDER
22	VLS-4615	2	PISTON CUP
23	VLS-4616	1	PISTON CUP SPACER
24	VLS-4617	1	PISTON CUP BACKUP
25	VLS-4620	1	BALL STOP
26	VLS-4621	1	FOOT VALVE SPRING
27	VLS-4602	1	FOOT VAVLE BODY
28	VLS-4604	1	FEMALE COMPRESSION RING
29	VLS-4605	1	PISTON ROD PACKING SPA
30	VLS-2424	1	FOOT VALVE COLLAR
31	VLS-2414	1	PISTON BALL SPRING
32	52106-3	1	QUICK PIN CABLE ASSY.
33	VPRO-1006	6	SLAVE ARM BUSHING
34	VPRO-1005	3	SLAVE ARM SPACER
36	F-HB-05C-12	2	HEX BOLT
37	O-V-137-90	2	O-RING
38	PF-SE-SW-12	1	MALE ELBOW
39	PF-RB-16-12	1	REDUCER BUSHING
40	7701-4-5	1	PLASTIC PLUG
41	VPRO-1007	1	MOUNT BLOCK
42	VPRO-1003-01	1	LINK BAR
43	VPRO-1001	2	UPPER SLAVE ARM
44	VPRO-1002	2	LOWER SLAVE ARM
45	85729-3	1	CENTER SECTION ASSY.
46	VPRO-2000	1	SHIFT BLOCK ASSY.
47	85806-1	1	TRIP SLEEVE
48	85810-1	1	PISTON ROD
49	86800-1	1	SPRING RETAINER
50	87060-1	1	MALE COMPRESSION RING
51	ALS-1018	1	CHROME BALL
52	VLS-4622	1	CHROME BALL
53	95033-EN	1	PUMP PRIME CAUTION LABEL (NOT SHOWN)
54	95081-3	1	SLAVE ARM DECAL (NOT SHOWN)
55	95084-EN	1	AIR SHUT OFF CAUTION LABEL (NOT SHOWN)
57	PF-ME-06-04	1	MALE ELBOW

REPAIR KITS

PART NO.	DESCRIPTION
VPRO-45110-SK	SEAL KIT

OPTIONAL PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
23B	3101-13-2	1	HARDENED PISTON CUP SPACER
24B	3101-14-2	1	HARDENED PISTON CUP BACKUP
56	VLS-2425	1	BALL STOP PIN (PART OF 48)



MAGNUM VENUS PRODUCTS

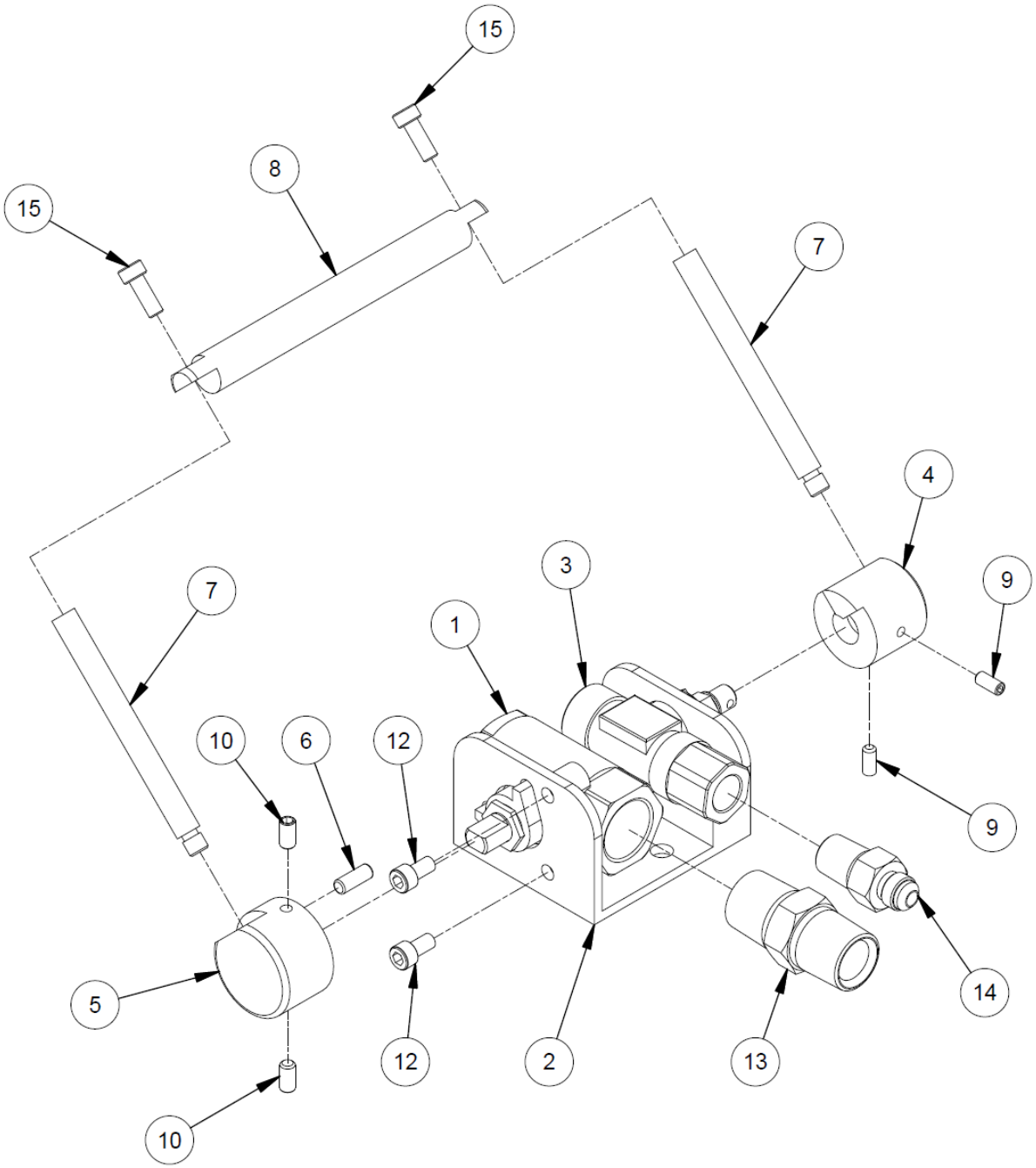
Dual Parallel Ball Valve Assembly	85690-1

REV. X

Dual Parallel Ball Valve Assembly 85690-1

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	85693-1	2	BALL STOP
2	85691-1	1	HANDLE BAR
3	85692-1	2	HANDLE STUD
4	85680-1	1	VALVE MOUNT BRACKET
5	05836	2	1/4" SS BALL VALVE W /BALL STOP SCREW
6	PF-HN-04-04S	1	FITTING - 1/4 HOSE - 1/4 NPT
7	55230-1	1	HOSE FITTING - CAT INDUCER PUMP
8	02143	1	CARTRIDGE NOZZLE
9	02870-4	2	SOCKET HEAD CAP SCREW
10	02142	1	CARTRIDGE NOZZLE
11	7102-12-4	4	CUP POINT SET SCREW



MAGNUM VENUS PLASTECH

DUO BALL VALVE ASSEMBLY	DBV-2000

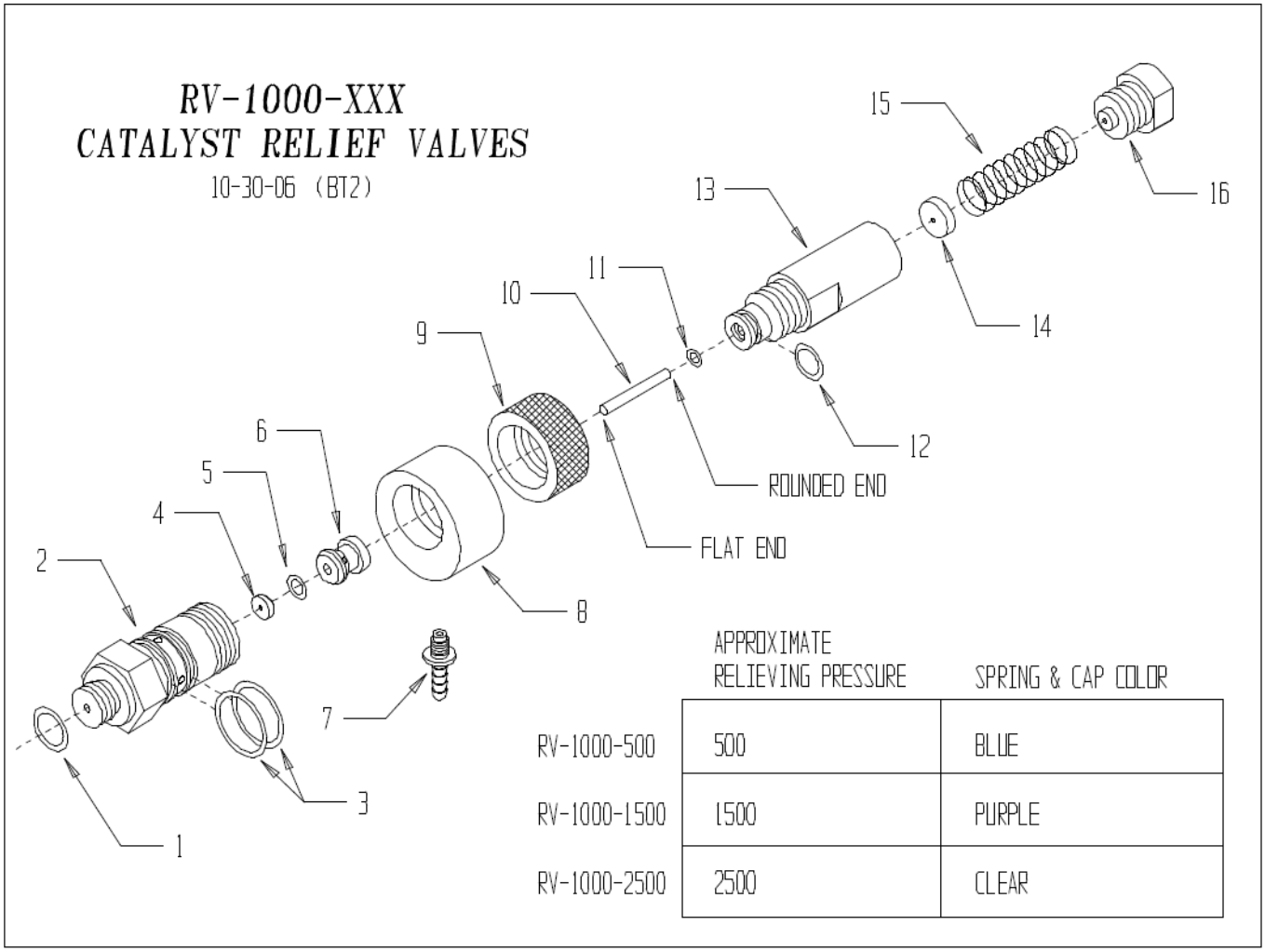
REV: SHEET 1 / 2 7/28/2010

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	BV-88-316	1	.50 SS BALL VALVE
2	DBV-2002	1	MOUNT BRACKET
3	05836	1	.25 SS BALL VALVE
4	85693	1	BALL STOP-PARALLEL VALVES
5	DBV-2004	1	BALL STOP
6	F-DP-03-08	1	DOWEL PIN
7	DBV-2001	2	HANDLE STUD
8	85691-1	1	HANDLE BAR
9	F-SS-832-06	2	SET SCREW
10	F-SS-1024-06	2	SET SCREW
12	F-CS-1024-06	2	CAP SCREW
13	PF-HN-08	1	HEX NIPPLE
14	55230-1	1	CATALYST HOSE FITTING
15	F-CS-1024-08	2	CAP SCREW

MAGNUM VENUS PLASTECH

DUO BALL VALVE ASSEMBLY	DBV-2000

REV: SHEET 2 / 2 7/28/2010



	APPROXIMATE RELIEVING PRESSURE	SPRING & CAP COLOR
RV-1000-500	500	BLUE
RV-1000-1500	1500	PURPLE
RV-1000-2500	2500	CLEAR

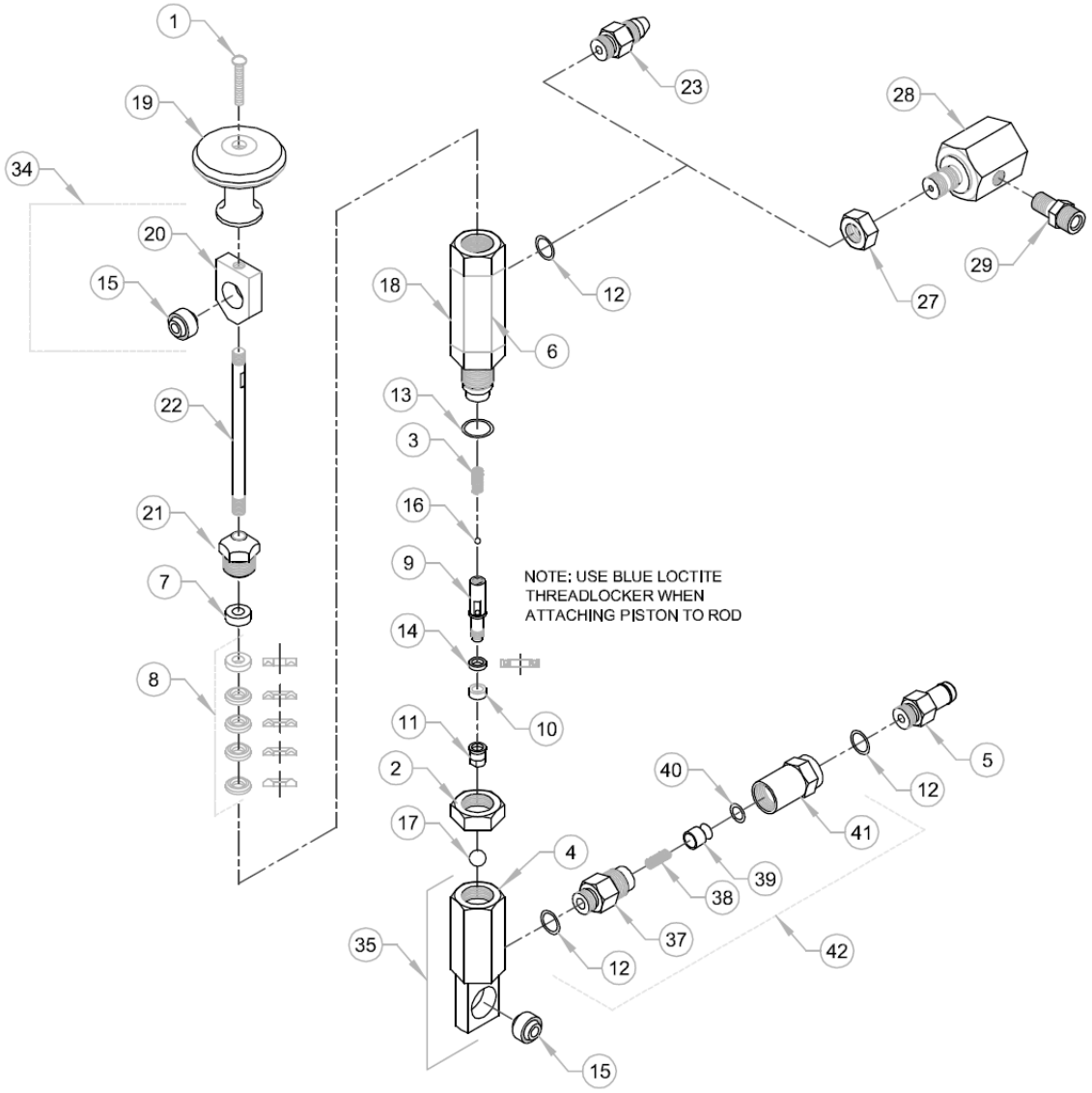
RV-1000-XXX
CATALYST RELIEF VALVES
10-30-06
CUSTOMER PARTS KEY

ITEM	PART #	DESCRIPTION	QTY
1*	O-S-013	O-RING	1
2	RV-1001	VALVE BODY	1
3*	O-S-017	O-RING	2
4	RV-1009	PIN STOP	1
5*	O-S-104A	O-RING	1
6	RV-1008	PIN ALIGNMENT SPOOL	1
7	RV-1004	DRAIN HOSE FITTING	1
8	RV-1003	DRAIN RING	1
9	RV-1005	DRAIN RETAINER RING	1
10	RV-1006	PIN	1
11*	O-S-006	O-RING	1
12*	O-S-011	O-RING	1
13	RV-1002	SPRING HOUSING	1
14	RV-1007	SPRING STOP	1
15	RV-1010	500# BLUE SPRING	1
	RV-1011	1500# PURPLE SPRING	
	RV-1012	2500# SPRING	
16	RV-1013	500# CAP MARKED 'B'	1
	RV-1014	1500# CAP MARKED 'P'	
	RV-1015	2500# CAP MARKED 'C'	

NOTE:
THE SPRING AND CAP FOR THE RELIEF VALVE MUST MATCH ACCORDING TO THE CHART ON THE FRONT PAGE. IN ORDER TO GET THE DESIRED RELIEVING PRESSURE.

SOLD SEPARATELY:

* RV-1000-SK SEAL KIT



MAGNUM VENUS PLASTECH

Assy - Catalyst Pump Internal Mix	PCP-1000-C-3J
Assy - Catalyst Pump External Mix	PCP-1000-RV

REV. E = ITEM 29 WAS PF-HN-02-03J-SS, ITEM 40 WAS O-S-011 02/23/06 BT2
REV. F = REMOVED ITEM 23 FROM PARTS LIST 03/09/06 BT2
REV. G = UPDATED FIGURE 1-1 01/29/07 BT2
REV. H = ADDED THREADLOCKER NOTE 02/20/14 BT2

Common Assy Parts List for ;
Assy - Catalyst Pump PCP-1000-C-3J
Assy - Catalyst Pump PCP-1000-RV
PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	02849-16	1	MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	TUBE FITTNG
6	6701-24-EN	1	PUMP SEAL WARNING DECAL
* 7	4102-4-1	1	UPPER GUIDE
* 8	4102-5-01	1	PISTON ROD PACK SPA
9	4102-7-1	1	PISTON BODY
* 10	4102-8-1	1	PISTON GUIDE
11	4102-9-1	1	SEAL RETAINER
* 12	O-S-013	3	O-RING
* 13	O-S-014	1	O - RING
* 14	7304-1-1	1	PISTON SEAL
15	9202-1-1	2	BEARING
16	9201-1-5	1	SS BALL
17	9201-1-14	1	SS BALL
18	15824-3	1	OUTLET BODY
19	50100-1	1	PRIMING KNOB
20	50210-1	1	BUSHING BLOCK
21	50590-1	1	PACKING NUT
22	85788-1	1	PISTON ROD
37	CV-2002	1	SPRING HOUSING
38	CV-2004	1	SPRING
39	CV-2003	1	PISTON
* 40	O-S-011A	1	O-RING
41	CV-2001	1	SEAT HOUSING

Repair Kits

PART NO.	DESCRIPTION
* PCP-1000-SK	SEAL KIT

Assy - Catalyst Pump PCP-1000-C-3J
PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
23	51501-1	1	OUTLET FITTING

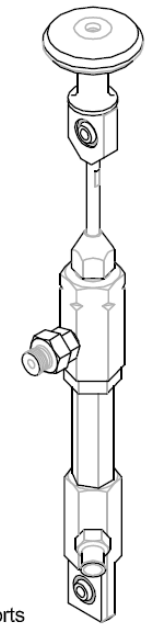
Assy - Catalyst Pump PCP-1000-RV
PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
27	4101-18-1	1	JAM NUT
28	RV-1021	1	ADAPTER
29	PF-HN-02-04S-SS	1	OUTLET FITTING

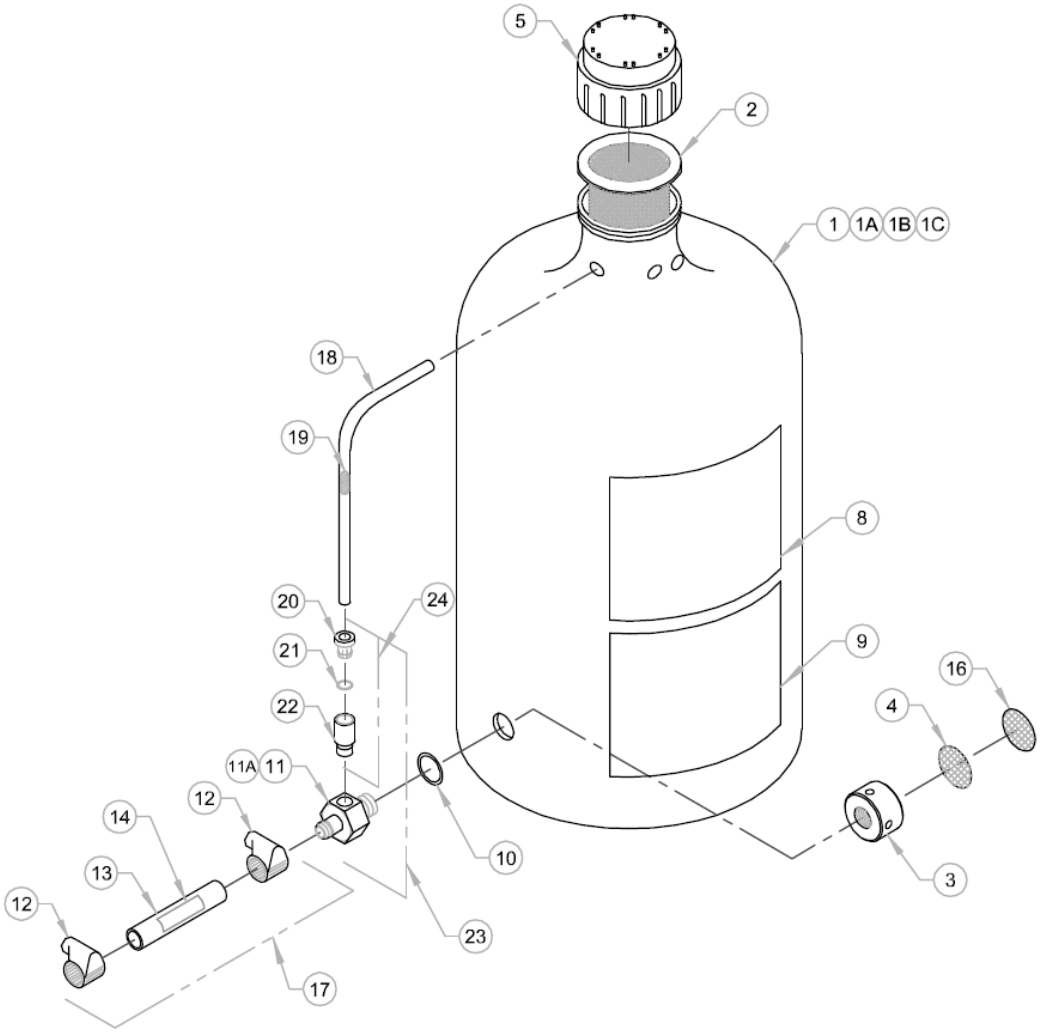
Associated Parts and Assemblies

ITEM	PART NO.	QTY	DESCRIPTION
34	50210-3	1	ASSY - BUSHING BLOCK
35	4101-7-01	1	INLET BODY SPA
42	CV-2000	1	CHECK VAVLE

FIGURE 1-1



Note:
Offset intake and outlet ports one flat on hex as shown in figure 1-1



MAGNUM VENUS PLASTECH

Catalyst Jug Assy W/ Recirc - W/O Sight Tube	CJ-2000-4
Catalyst Jug Assy W/ Recirc - W/O Sight Tube	CJ-2000-4-R
Catalyst Jug Assy W/ Recirc - W/ Sight Tube	CJ-2000-4-RS
Catalyst Jug Assy W/ Recirc - W/ Sight Tube	CJ-2000-4-RSP

REV. E = ADDED CJ-2000-4-RSP TO DWG 03/21/06 BT2
F = ITEM 12 WAS QTY. 12 11/14/07 BT2
G = ADDED ITEM 5, DELETED ITEM 7 02/01/08 BT2
H = CORRECTED ITEM 17 TO 3 FT 10/17/12 BT2

Common Assembly Parts For:
Catalyst Jug W/ Recirc W/O Sight Tube CJ-2000-4
Catalyst Jug W/ Recirc W/O Sight Tube CJ-2000-4-R
Catalyst Jug W/ Recirc W/ Sight Tube CJ-2000-4-RS
Catalyst Jug W/ Recirc W/ Sight Tube CJ-2000-4-RSP

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
2	8801-1-100	1	100 MESH 2 GAL CAT JUG SCREEN
3	4105-10-1	1	FILTER SCREEN NUT
4	4105-7-1	1	60 MESH SS SCREEN
10	O-S-016	1	O-RING
12	7701-2-2	2	1/2" SUCTION HOSE CLAMP
13	01419	3FT	1/2" POLY TUBE
14	6701-16-EN	1	CAT JUG SUCTION HOSE DECAL
15	4105-8-1	1	CAT JUG NUT PIN WRENCH (NOT SHOWN)
16	4105-6-1	1	100 MESH SS SCREEN

ASSOCIATED PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
5	8802-1-1	1	CAP
8	6701-4-EN	1	CONTAMINATES CAUTION DECAL
9	6701-15-EN	1	DAILY MONTHLY INTST DECAL
17	4105-2-01	1	1/2" x 3' FEED LINE
23	4105-12-01	1	OUTLET FITTING
24	4105-1-01	1	TUBE FITTING

Catalyst Jug W/ Recirc W/O Sight Tube CJ-2000-4

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	4105-11-04	1	2 GAL CAT JUG W/ CAP
11	59371-1	1	CAT JUG TUBE FITTING

Catalyst Jug W/ Recirc W/O Sight Tube CJ-2000-4-R

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1A	4105-11-03	1	2 GAL CAT JUG W/ CAP
11	59371-1	1	CAT JUG TUBE FITTING

Catalyst Jug W/ Recirc W/ Sight Tube CJ-2000-4-RS

PARTS LIST

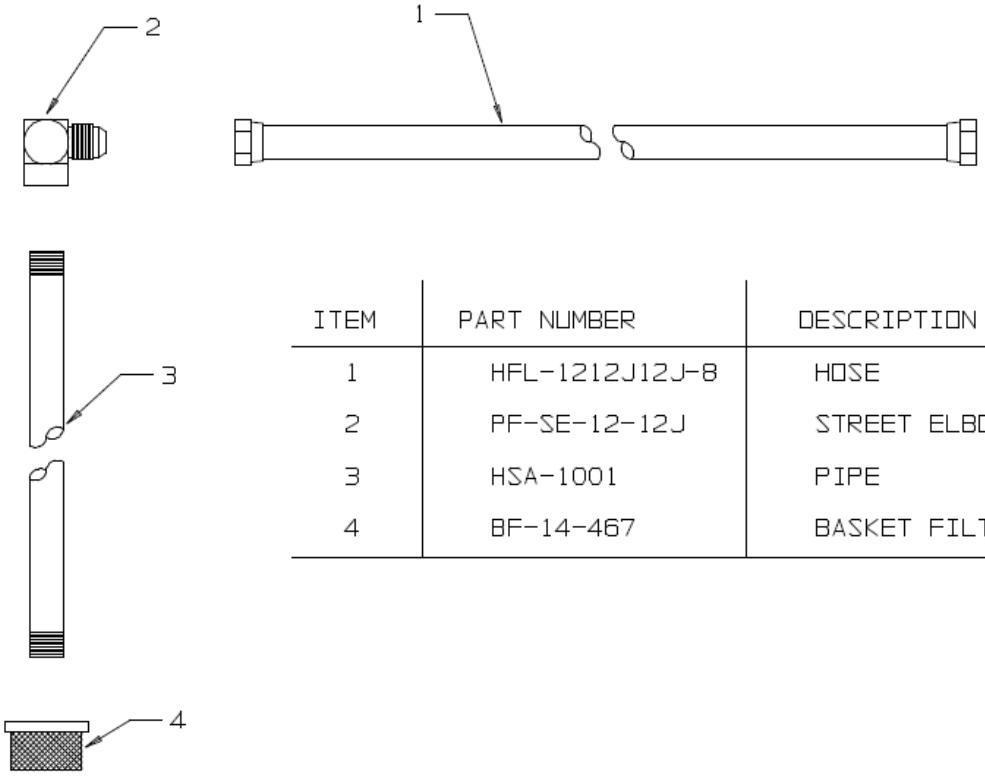
ITEM	PART NO.	QTY	DESCRIPTION
1B	4105-11-02	1	2 GAL CAT JUG W/ CAP
11A	4105-12-1	1	CAT JUG TUBE FITTING
18	4105-4-1	1	1/4" x 14" SIGHT TUBE
19	4105-9-1	1	SIGHT TUBE FLOAT
20	4105-5-1	1	SPLIT BUSHING
21	O-S-010	1	O-RING
22	4105-1-1	1	TUBE FITTING BODY

Catalyst Jug W/ Recirc W/ Sight Tube CJ-2000-4-RSP

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1C	4105-11-05	1	2 GAL CAT JUG W/ CAP
11A	4105-12-1	1	CAT JUG TUBE FITTING
18	4105-4-1	1	1/4" x 14" SIGHT TUBE
19	4105-9-1	1	SIGHT TUBE FLOAT
20	4105-5-1	1	SPLIT BUSHING
21	O-S-010	1	O-RING
22	4105-1-1	1	TUBE FITTING BODY

HSA-1000
SIPHON HOSE ASS'Y
05-14-03 (BT2)



ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	HFL-1212J12J-8	HOSE	1
2	PF-SE-12-12J	STREET ELBOW	1
3	HSA-1001	PIPE	1
4	BF-14-467	BASKET FILTER	1

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Revision Information:

Revision:	Description:
Rev. 03/2013	Updated the drawings and the “Terms and Conditions” section. Updated the document format, logo, and address and added the revision information section.
Rev. 10/2014	Updated the Address, name, logo and the Terms & Conditions of Sale. Removed references to Plastech. Updated the Parts Drawings section.

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Included with this operations manual are the following component manuals:

- ❑ **VPRO-45110 Series Pump Manual** - FLUID SECTION / PUMP ASSEMBLY
- ❑ **PCP-2000 Catalyst Pump Manual – Low Range** – CATALYST PUMP ASSY